

TECHNICAL REVIEW DOCUMENT
For
RENEWAL TO OPERATING PERMIT 96OPWE154

Public Service Company of Colorado – Ft. Lupton Combustion Turbines
Weld County
Source ID 1230014

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Revised February, March and April 2013

Reviewed by:

Operating Permit Supervisor:
Field Services Unit:

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I. Purpose:

This document will establish the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed operating permit proposed for this site. The current Operating Permit was issued December 1, 2008. The expiration date for the permit is December 1, 2013. This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted October 30, 2012, comments on the draft permit and technical review document received on March 17, 2013, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at www.colorado.gov/cdphe/airTitleV. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

This facility is classified as an electric services facility under the Standard Industrial Classification 4911. This facility is an unmanned electric power generating station that consists of 2 simple cycle combustion turbines that can generate up to 100 MW of power. Typically this facility is used to service peak electrical load demands. The turbines are capable of burning natural gas, Nos. 1 and/or 2 fuel oil or combination.

The facility is located approx. 2 miles east of Ft. Lupton in Weld County. This facility is located in an area classified as attainment for all pollutants except ozone. It is classified as non-attainment for ozone and is part of the 8-hr Ozone Control Area as defined in Regulation No. 7, Section II.A.1.

Rocky Mountain National Park and Rawah National Wilderness Area, both federal class I designated areas, are within 100 km of this facility.

The summary of emissions that was presented in the Technical Review Document (TRD) for the previous renewal permit issuance has been modified to update actual emissions. The emissions in the table below represent emissions from both turbines together.

Pollutant	Potential to Emit – 100% Natural Gas	Potential to Emit – 100% Nos. 1 and/or 2 Fuel Oil	Actual Emissions – Combination ³
PM ¹	580	575	0.2
PM ₁₀ ¹	580	575	0.2
SO ₂ ²	4,644	4,597	1.2
NO _x	2,032	5,057	21.4
CO	528	19	4.5
VOC	13.4	2.4	0.2
Total HAPS	5.94	2.13	
Highest Single HAP ⁴	4.12	1.61	

¹PTE, when burning any fuel, is based on the PM limit (0.1 lbs/mmBtu) x design heat rate x 8760 hrs/yr. PM₁₀ is assumed to equal PM. Heat input when burning NG is 662.6 mmBtu/hr and when burning DO is 656 mmBtu/hr.

²PTE, when burning any fuel, is based on the Reg 1 SO₂ limit (0.8 lbs/mmBtu) x design heat rate x 8760 hrs/yr.

³Actual emissions identified in the table are for both turbines together and include both natural gas and fuel oil combustion.

⁴Highest single HAP is formaldehyde.

Potential to emit for the turbines is based on the information identified in the table and the maximum hourly fuel consumption rate, AP-42 emission factors and 8760 hrs/yr of operation. Actual emissions are based on APENs submitted on April 30, 2008 (2007 data).

In the above table, the breakdown of HAP emissions by fuel burned and individual HAPs is provided on page 8 of this document. HAP emissions are based on the maximum hourly fuel consumption rate, 8760 hrs/yr of operation and AP-42 emission factors (Section 3.1, dated 4/00, Tables 3.1-3 and 3.1-4).

National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories

As indicated in the above table summarizing potential to emit, the facility is not a major source for HAPS and is an area source (minor source) for HAPs. As indicated in the technical review document to support the second renewal permit (issued December 1, 2008), EPA has been promulgating NESHAPs (also referred to as "MACT requirements") for area sources, and those requirements that could potentially apply to this facility are discussed below.

Paint Stripping and Miscellaneous Surface Coating at Area Sources (40 CFR Part 63 Subpart HHHHHH)

As indicated in the technical review document to support the second renewal (issued December 1, 2008), the Division considers that any spray coatings of motor vehicles and mobile equipment and spray application of coatings that contain the target HAP at this facility would meet the definition of facility maintenance. The source indicated that none of the paint stripping chemicals used at the facility contain methylene chloride; therefore, the provisions in 40 CFR Part 63 Subpart HHHHHH do not apply.

Reciprocating Internal Combustion Engines (40 CFR Part 63 Subpart ZZZZ)

The reciprocating internal combustion engine (RICE) MACT was signed as final on February 26, 2004 and was published in the Federal Register on June 15, 2004. Under this rulemaking only RICE that were > 500 hp and located at major sources of HAPS were subject to the requirements. Subsequent revisions were made to the RICE MACT to address new engines \leq 500 hp located at major sources and new engines of all sizes at area sources (final rule published January 18, 2008), existing compression ignition engines \leq 500 hp at major sources and all sizes at area sources (final rule published March 3, 2010) and existing spark ignition engines \leq 500 hp at major sources and all sizes at area sources (final rule published August 20, 2010).

There are no reciprocating internal combustion engines located at this facility; therefore, the requirements in 40 CFR Part 63 Subpart ZZZZ do not apply.

Industrial, Commercial and Institutional Boilers located at Area Sources (40 CFR Part 63 Subpart JJJJJJ)

Unlike the NESHAP for major sources (40 CFR Part 63 Subpart DDDDD), these requirements only apply to boilers, not process heaters. There is no boilers located at this facility, therefore the requirements in 40 CFR Part 63 Subpart JJJJJJ do not apply.

New Source Performance Standards (NSPS)

EPA has promulgated NSPS requirements for new source categories since the issuance of the second renewal permit for this facility. NSPS requirements generally only apply to new or modified equipment and the Divisions is not aware of any modifications to existing equipment or additions of new equipment that would render equipment at this facility subject to NSPS requirements. However, because the recently promulgated NSPS requirements address equipment that may not be subject to APEN reporting or minor source construction permit requirements, the applicability of some of the newly promulgated requirements are being addressed here.

NSPS Subpart JJJJ – Stationary Spark Ignition Engines

NSPS Subpart JJJJ applies to stationary spark ignition engines that commenced construction, reconstruction or modification after June 12, 2006 and were manufactured after specified dates. The date the engine commenced construction is the date the engine was ordered by the owner/operator. As indicated previously, there are no engines located at this facility. Therefore, the requirements in NSPS Subpart JJJJ do not apply.

NSPS Subpart IIII – Stationary Compression Ignition Engines

NSPS Subpart IIII applies to stationary compression ignition engines that commenced construction, reconstruction or modification after July 11, 2005 and were manufactured after specified dates. The date the engine commenced construction is the date the engine was ordered by the owner/operator. As indicated previously there are no engines located at this facility. Therefore, the requirements in NSPS Subpart IIII do not apply.

Regulation No. 7 Requirements

The area in which the facility is located was designated nonattainment for the 8-hour ozone standard in November 2007. In December 2008 Regulation No. 7 was revised to apply to any ozone nonattainment area (the regulation had previously only applied to the 1-hour Denver Metro ozone attainment/maintenance area or any nonattainment area for the 1-hour ozone standard). Since this facility is outside of the 1-hour Denver Metro ozone attainment area but is within the 8-hour ozone nonattainment area, this facility would potentially be subject to Regulation No. 7 requirements. The applicability of the requirements in Sections XII (oil and gas operations) and XVI (internal combustion engines) were discussed in the technical review document prepared for the second renewal permit (issued December 1, 2008). Specifically these requirements do

not apply because the facility is not involved in oil and gas operations and there are no internal combustion engines at the facility.

The equipment at this facility is not subject to any of the specific requirements in Regulation No. 7. The diesel storage tank included in the insignificant activity list is exempt from the tank requirements in Sections VI.B.2 and 3 under the provisions of Section VI.B.1.a.

Although there is no equipment at this facility subject to any of the specific requirements in Regulation No. 7, existing sources (as defined in Section I.B.2) are subject to RACT requirements in Section II.C.1 if the VOC potential to emit exceeds 100 tons/yr. Since the VOC potential to emit at this facility is below 100 tons/yr the general RACT requirement for existing sources in Section II.C.1 does not apply.

Compliance Assurance Monitoring (CAM) Requirements

Because neither turbine is equipped with a control device the Compliance Assurance Monitoring (CAM) requirements do not apply to these units.

Greenhouse Gas Emissions

The potential-to-emit of greenhouse gas (GHG) emissions from this facility is greater than 100,000 TPY CO₂e. Future modifications greater than 75,000 tons per year CO₂e may be subject to regulation (Regulation No. 3, Part A, I.B.44).

Repealed APEN Exemptions

Since the second Title V renewal permit was processed (issued December 1, 2008) the APEN exemptions for engines – limited size and hours (Reg 3, Part A, Section II.D.1.sss) and emergency generators – limited size and hours (Reg 3, Part A, Section II.D.1.ttt) was repealed. Since there are no engines at this facility, the repealed APEN exemptions do not affect this facility.

III. Discussion of Modifications Made

Source Requested Modifications

The source's requested modifications were addressed as follows:

October 30, 2012 Renewal Application

Page following cover page

The source requested that the permit contact be revised. The change has been made as requested. In their comments on the draft permit submitted March 17, 2013 via e-mail, the source requested that the responsible official be changes also.

Appendix A

The source requested that the plot plan in Appendix A be replaced. The plot plan submitted with the renewal application has been included in the permit.

Other Modifications

In addition to the source requested modifications, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments to the Ft. Lupton Combustion Turbines Renewal Operating Permit. These changes are as follows:

Page Following Cover Page

- Monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).
- Under “issued to” revised the address and included the full company name (i.e., “Public Service Company of Colorado”, rather than “Public Service Company”)

General

- Revised the headers to include the full company name (i.e., “Public Service Company of Colorado”, rather than “Public Service Company”).

Section I – General Activities and Summary

- Revised the description in Condition 1.1 to indicate that Rawah National Wilderness Area (a federal class I area) is within 100 km of the facility and to correct the citation for the definition of the 8-hour ozone control area.
- Condition 1.4 was revised to remove Section IV, Condition 3.d as a state-only requirement, since EPA approved these provisions into Colorado’s SIP effective October 6, 2008.
- Revised the title of the second column in Condition 6.1 to state “AIRS Point Number” as this is more appropriate.

Section II.2 – Turbines Burning Fuel Oil

- Revised the language in Condition 2.6 to specify that the Method 9 observation shall be made once per calendar year to clarify the annual period and to specify that if fuel oil is not used during the calendar year, a Method 9 observation is not necessary.

Section III – Permit Shield

- Removed the Colorado Regulation No. 7 requirements (with listed exceptions) from the table in Section III.1 (specific non-applicable requirements). The Regulation No. 7 requirements now apply to sources located in any ozone nonattainment area. If the source wished to include other specific sections of Reg. 7 in the table in Section III.1 the requirements must be specifically identified and a justification provided.

Section IV – General Conditions

- A version date was added.
- The paragraph in Condition 3.d indicating that the requirements are state-only has been removed, since EPA approved these provisions into Colorado's SIP effective October 6, 2008.
- The title for Condition 6 was changed from "Emission Standards for Asbestos" to "Emission Controls for Asbestos" and in the text the phrase "emission standards for asbestos" was changed to "asbestos control".
- Condition 29 (VOC) was revised primarily to add the provisions in Reg 7, Section III.C as paragraph e although other minor language and format changes were made.

Appendices

- Language was added to the insignificant activity list in Appendix A to indicate those insignificant activity categories for which records should be available to verify insignificant activity status.
- Revised the reports in Appendices B and C to include the full company name (i.e., "Public Service Company of Colorado", rather than "Public Service Company").
- Changed the name of the Division contact for reports in Appendix D.

Hazardous Air Pollutant Emissions

AP-42 Emission Factors¹

Pollutant	Natural Gas		Distillate Fuel	
	Emission Factor (lb/mmBtu)	Emissions (tons/yr)	Emission Factor (lb/mmBtu)	Emissions (tons/yr)
Acetaldehyde	4.00E-05	2.32E-01		
Acrolein	6.40E-06	3.71E-02		
Benzene	1.20E-05	6.97E-02	5.50E-05	3.16E-01
Ethylbenzene	3.20E-05	1.86E-01		
Formaldehyde	7.10E-04	4.12E-00	2.80E-04	1.61E-00
Naphthalene			3.50E-05	2.01E-01
Propylene Oxide	2.90E-05	1.68E-01		
Toluene	1.30E-04	7.55E-01		
Xylenes	6.40E-05	3.71E-01		
Total		5.94E-00		2.13E-00

¹from AP-42, Section 3.1 (dated 4/00), Tables 3.1-3 and 3.1-4